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Editorial

Y2K - Ready or Not, here it comes.

As everyone knows, in less than 12 weeks we are all going to participate in a huge experiment. We are going to find out what happens when millions of computer processors receive an instruction that they may not be able to interpret correctly. We may learn something about our dependence on electronic devices. We may find out that it truly is a small world if a glitch in some distant place ricochets and forces itself upon us. This is one experiment where no one really knows what will happen. Are you ready?

Are you ready personally? Ready does not imply panic mode, but rather reasonable preparedness. You can never go wrong having some good flashlights, candles, a battery-powered radio, a week's worth of food and drinking water, and some interesting reading material. These are things you want to assemble now, not December 27.

Are you ready professionally? Here are some things you might plan to do in this regard:

1. Have any exhibits or reports that are due the first week in January ready to go before January 1.
2. Contact clients who expect something from you in early January and make contingency plans in case there are communications breakdowns. Assure your clients that you are prepared for their cases.
3. Back up all work-related files to external media (CD, tape drive, floppies, zip drive) before January 1, even if you expect no problem with your computer.
4. Be sure that no important photographs are out for processing.
5. Be prepared to replace some piece of equipment. In my office, I would not be surprised if the answering machine failed.
6. Be ready for a possible increase in workload. This may be a time of confusion and institutional disruption — a perfect time for criminal activity.
7. Don't "put it off until after the holidays" as in most years.

If you follow these steps you may still have some Y2K related problems descend upon you. But if nothing happens or if there are glitches, disruptions or outages, you may simply have a nice week at home eating simple meals, sleeping late, catching up on your reading and listening to the battery powered radio. Sounds like a nice way to spend the first week of January, doesn't it?

Whether you read this issue today or at Y2K, you may notice two unplanned themes; exemplars in handwriting cases and document security. These are timeless issues in our profession and it is fitting that we reexamine them as we approach a new millennium.

Emily Will,
Chief Editor

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LIMITED EXEMPLARS AND THEIR USE IN FORMING EXPERT OPINIONS

by

Jacqueline A. Joseph, CDE

FORENSIC ABSTRACT: This case report discusses signature genuineness and the problem of limited (deficient) exemplars. After an exhaustive search, one exemplar (written 45 years prior to the questioned signature) was found containing a compelling, fundamentally distinguishing feature. This older exemplar became useful for identification despite its age limitation. The other exemplars (31) were limited in usefulness. Testimony offered in court utilized the available observations from the limited exemplar supply. Applicable scientific principles of identification were used as well and led to the most appropriately reliable expert opinion of "inconclusive." From the bench, the judge ruled, without extra deliberating time, in favor of the questionable signature's authenticity.

Key words: limited exemplars, pen scope, exemplar criteria: legibility, quality, quantity, comparability, admissibility. Case law: inconclusive opinion expert testimony.

The uncommon Greek name "Athanasios Andy Monstis" was seldom written by the decedent who regularly signed his nickname "Tom Monstis" throughout his lifetime. However, upon his death in 1996 at age 68, a will dated 9-18-92 bearing his uncommon three-name graphic unit signature of Athanasios Andy Monstis (See Figure 1) was brought forth by his son who claimed it was genuine. The existence of this will was previously unknown to the current wife of the decedent. She then contested it as false by claiming that the signature was forged, and substantiated her assertion by merit of the existence of a prior will in her possession. This will bore the uncontested nickname signature (the two-name graphic unit "Tom Monstis") executed in 1985 (7 years prior to the disputed will signature).

Figure 1
The Questioned Signature 9-18-92.

To support a reliable opinion resulting from a forensic examination of a signature, one aims to conform to the highest standards of scientific approach set forth in the field of forensic document examination. In comparing signatures for forensic purposes, an exemplar (also called a standard or control) is defined as an authentic sample acceptable or provable to the court as such, and one which is a valid comparison to the questioned signature.[1] Taking exemplar criteria into account, these limited exemplars were evaluated. In court, the concise description of the exemplars, their value, and usefulness were offered.[2]

The following criteria were stressed regarding usefulness of exemplars in handwriting examination. The best exemplars[3] are:

1. Of the same nature (same wording/spelling)
2. Legible
3. Sufficient in quantity
4. Provable as authentic
   (size and source verified).
5. Contemporary in date.

To meet the first criterion, useful exemplars of the same nature as the questioned signature were needed. (See Figure 1 - The Questioned Signature) It was essential that these repeated the seldom written three-name graphic unit with the notable spelling of Athanasios Andy Monstis. Handwriting (signature) exemplars should recreate the identifying elements of the questioned writing with which they are to be compared.[4] Because the writing of an entire three-name signature is con-

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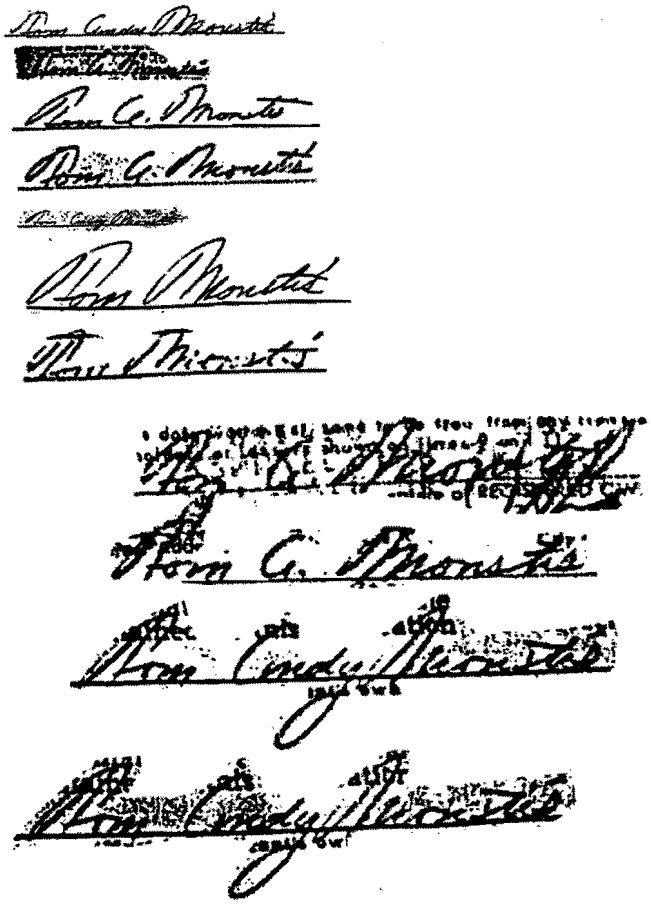

(Re-sized for illustration purposes.)

Figure 2

Exhibit A: The first-set exemplar signatures are limited for use in forming an opinion because they do not compare in wording to the questioned signature and most of them are illegible.

sidered a whole unit of movement activity, the examiner would want to use comparable exemplars to obtain the most reliable group of observations.[5]

The disputed three-name graphic unit signature of Athanasios Andy Monstis was not observed in the first set of exemplar signatures (See Figure 2) so the first criterion of exemplar usefulness was not met. This became a limitation as to the usefulness of this exemplar group in conducting an examination for reliable observations.

The first set of 12 exemplar signatures contained only the following nickname signatures:

Tom Andy Monstis
Tom A. Monstis
Tom Monstis

Also of critical importance regarding exemplars of same-name wording and spelling is pen scope. Pen scope is defined as the amount of writing done before a notable readjustment in movement or grip, or without a break in the progressive motor sequence.[6] Pen scope adjustments can be observed by a knowledgeable examiner. However, in an attempt to forge, trace or otherwise write an imitation of another's signature, the pen scope adjustments can be very difficult to observe and actually duplicate.[7]

After an exhaustive search, one three-part exemplar of "Athanasios" was found and examined (See Figure 4). A compelling observation became available: the same penscope of the 5-letter unit "-asios" of "Athanasios" in the exemplar signature was also observed in the questioned signature written 45 years later. Observed additionally were the same letter forms, sizes, slant & inter/intra letter spacing.

The combination of the above-mentioned observations became an indication of common authorship. At this point in the examination, common authorship was further considered and indicated after the ruling out of a traced signature or cut-and-paste signature based upon the microscopic examination of the original document/signature.

Also notably, the questioned signature had the correct spelling of the uncommon Greek name. In order to replicate the spelling of "Athanasios Andy Monstis," one would need access to a seldom executed model or other background information.

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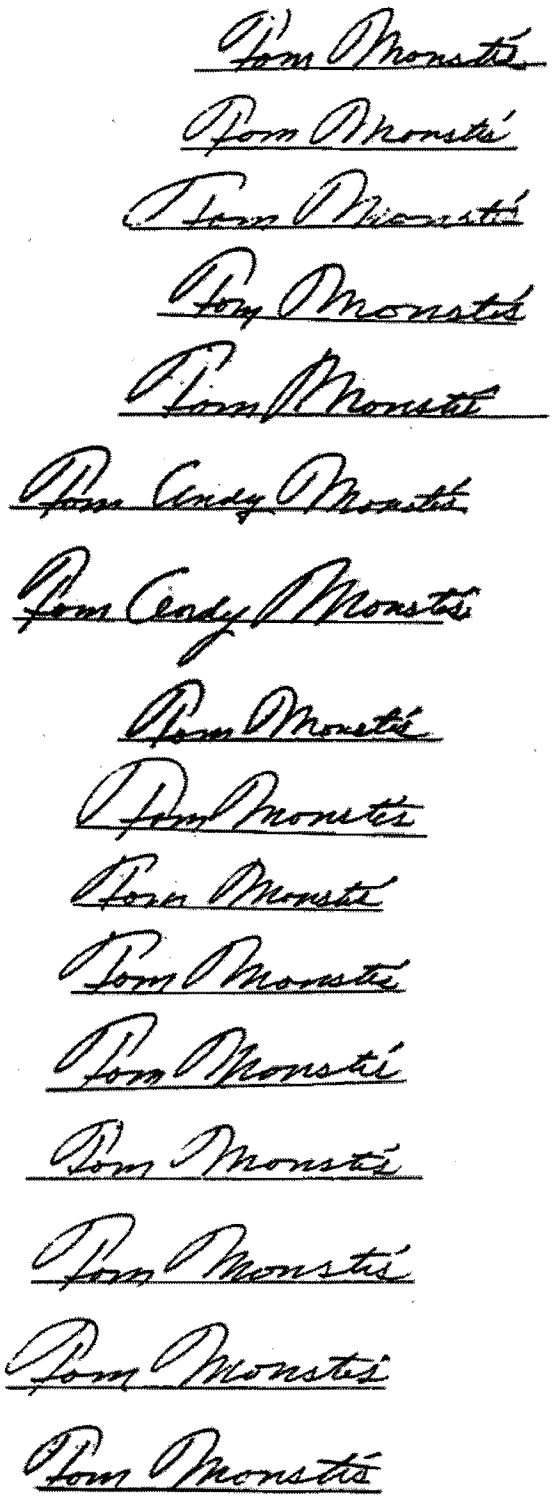

(Resized for illustration purposes.)

Figure 3

Exhibit B: These exemplars are limited because they do not compare in wording to the questioned signature, and they may have been chosen by the opposing side in favor of their opinion.

The object of the exemplars is to illustrate, fairly and completely, their author's writing habits. To do this, they must be legible - the second criterion. The legibility of the majority of exemplar signatures in the first set (See Figure 2) was quite poor. This rendered them unsuitable which further limited their use in the examination. The dark, unclear and distorted written images were the result of the process of photocopying from microfilm.[8]

Regarding the third criterion, that exemplars should be sufficient in quantity, Osborn states that from five to 25 signatures should be used in the comparison process to clearly show the writing habits of the individual under investigation.[9] A group of exemplar signatures submitted by the opposing counsel was also examined by this author (See Figure 3). Although these 16 exemplar signatures certainly met the criteria of sufficient quantity and legibility, this examiner objected to the fact that they did not meet the critical first criterion of same nature/wording of the three-name graphic unit previously discussed.

Further, in this case the individual selecting the exemplars was a party of interest. The selections could have been chosen with bias toward that person's claim.[10] This examiner explained to the court the above mentioned limitations of this particular exemplar group (See Figure 3, Exhibit B). The court was advised that this exemplar group was considered not reliable and therefore was not further examined.

In considering the fourth criterion, that the exemplar must be provable as authentic, Harrison states it is essential that all standard comparison material be admissible as evidence.[11] Figure 4 shows a useful and provable group of four (4) undisputed signatures written on the 1985 will, and one (1) 1947 signature appearing on a US Army Discharge Form which was certainly written prior to the dispute.

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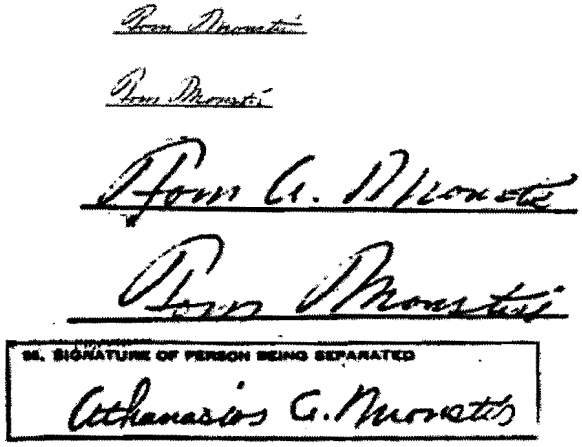

(Resized for illustration purposes)

Figure 4

Exhibit C: The undisputed exemplar group is limited in quantity; however, its usefulness is due to the fact that the genuineness is undisputed by all.

The fifth and final criterion states that ideal exemplars should be contemporary in date with the questioned signature. None of the undisputed and useful exemplars were contemporary in date with the questioned signature.

Even though some of the other limitations discussed herein certainly apply to this group (Figure 4), the signatures were determined to be the most reliable for use in the examination. The stability of observable features over time added weight and significant value. First, they yielded a valuable combination of the most compelling observations, which included but were not limited to comparable pen scope and lack of variation of letter size, form, slant and spacing. Second, this stability was more compelling especially considering the health conditions listed in the decedent's medical records.[12]

All things considered, in actually dealing with the very limited exemplar group in Figure 4, the indicators of common authorship were even more compelling given the time lapse of seven and 45 years, respectively. This was clearly demonstrated to the court within the context of the expert opinion of "inconclusive."

In conducting the necessary protocol of a reliability check,[13] each method of possible forgery was considered. Using the available objective indicators, the court was advised that no indication of falsity, including tracing, and imitation (drawing), or simulation of the questioned signature, was observed.

In summary, the available observations drawn from the limited exemplars indicated that the questioned signature was genuine. However, for a scientific approach in forming and supporting a reliable opinion, due to the limitations of the exemplars it could not be stated with certainty that the signature was genuine. The most reliable opinion was therefore "inconclusive." The court was advised that if an entire pool of useful and valid exemplars were available and examined, and if similar observations occurred, the reliable indicators would favor genuineness.

Endnotes:

1. *Questioned Documents,* Albert S. Osborn. Nelson-Hall, Chicago, Ill. 1929, p. 13.
2. *Exemplars: Genuine Samples for Comparison with Questioned Writings and Documents,* Marcel B. Matley. Handwriting Services of California, San Francisco, CA. 1990, p.22.
3. *Questioned Documents,* Albert S. Osborn. Nelson-Hall, Chicago, Ill. 1929, pp.27-29.
4. *Evidential Documents,* James V. P. Conway. Charles C. Thomas, Publisher, Springfield, Ill. 1959, p.76.
5. *Experiments with Handwriting,* Robert Saudek. Reprinted by Books for Professionals, Sacraments, CA. 1978, p. AA/Glossary. See "Adjustments."
6. Journal of the National Association of Document Examiners, Vol 20. No. 1 Spring 1997, *The Unidentifiable Handwriting.* by Jacqueline A. Joseph, CDE.

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7. *Experiments with Handwriting,* Robert Saudek. Reprinted by Books for Professionals, Sacraments, CA. 1978, Chapter III, Authentic and Spurious Expression in Handwriting. pp. 127-188.
8. *Evidential Documents,* James V. P. Conway. Charles C. Thomas, Publisher, Springfield, Ill. 1959, p. 249.
9. *Questioned Documents,* Albert S. Osborn. Nelson-Hall, Chicago, Ill. 1929, p. 27.
10. *Reliability Testing of Expert Handwriting Opinions,* Marcel B. Matley. Handwriting Services of California, San Francisco, CA. 1992, p. 10.
11. *Suspect Documents,* Wilson R. Harrison, M.Sc., Ph.D. Nelson-Hall Publishers, Chicago, Ill. 1958, p. 437.
12. The questioned signature was executed on 9-18-92. At that time Monstis was using many medications, including Dyazide, Vasotec, Tandate, Procardia XL, KCL daily. On 4-23-92 his medical records indicate a very severe and strange numbness in the fourth and fifth fingers of the right hand, forearm and upper shoulder. This hand was dominant and used for writing. See: #2 Matley pg. 16.
13. *Reliability Testing of Expert Handwriting Opinions,* Marcel B. Matley. Handwriting Services of California, San Francisco, CA. 1992.

Case Law

1. *Aetna Casualty & Surety Co. v Nielsen,* 217, 348 NW2 851 (1984); overruling in part *First National Bank v Bolzer,* 222 Neb 92, 382 NW2 328 (1986) At 328.

1. "Trial court's ruling in receiving or excluding expert testimony will be reversed only when there has been abuse of discretion."
2. Such ruling "must be viewed in light of judicially recognized fact that it is not possible to establish exact standard for determining qualifications of expert or skilled witness..."
3. Trial court did not err in admitting the handwriting expert.
4. "Weight of expert testimony is for trier of fact."

At 329. University professor who deciphered difficult handwriting testified as handwriting identification expert, although he gave no opinion but explained to jury what to compare, "including the slant, alignment, spacing, pen lifts, and feathering used in forming letters and words, line wavers found in tracings of writing but not in spontaneous writing."

2. *U.S. v Currier,* 454 F2 835 (1 Cir 1972) At 837. "Despite the erasure, the writing was visible to the naked eye and clear in the government's infrared photograph. The erased handwriting strongly resembled defendant's writing of the same words and figures on the settlement sheet of July 18. Although the government expert could not testify with certainty that the erased words were written by the defendant, there was sufficient evidence for the jury to believe they were."

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http://jjhandwriting.com

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COUNTERFEIT CURRENCY

by

Sgt. Joseph M. Rosowski
City of Philadelphia Police Department

"In God We Trust - all others pay cash," is losing its luster as a slogan. While counterfeiting represents only three hundredths of a percent of the 450 billion bills in circulation and only one hundredth of a percent of the total value of money, it is an increasing occurrence. The United States Secret Service estimates that the amount of counterfeit bills seized in 1998 increased by 33%. This is the first increase in three years. Treasury Department and U.S. Secret Service officials agree that this threat is to be taken seriously but add that it is not now at a level that poses an economic threat to the U.S. monetary system.

The grounds for the increase appear to be two-fold. First, computers, scanners and color printers are readily available and easy to use. Computers are available for free (with an Internet contract) or can be accessed at a library. Rep. Michael Castle, chairman of the House Subcommittee on Domestic and International Monetary Policy states, "Personal computer counterfeiting has become a print-to-order crime."[1] Additionally, the redesign of the U. S. currency begun in March of 1996 may have caused a temporary augmentation to the increase in counterfeiting.

Computer Generated Counterfeits

Philadelphia once had the unofficial distinction of being the "Office Copying-Machine Counterfeit Capital of the United States." Philadelphians loved to run photocopied dollar bills through a change machine. Each incident netted the perpetrator one whole dollar. I can attest to the frugality of the Philadelphian counterfeiter since I have examined many cut-and-paste lottery tickets. It is amazing to observe how much work an individual will perform in order to produce an altered winning lottery ticket for $5.00. The use of computers and their peripherals has increased the quantity of these amateur counterfeiters.

Dennis Lynch, special agent-in-charge of the U.S. Secret Service Counterfeit Division, said inkjet and laser printer-produced bills accounted for 19% of all counterfeit currency seized in 1997, an 805% increase from 1995. In 1998 those printers were responsible for 43% of all counterfeits seized.

Products of each type of printer possess their own characteristics. The image produced by a color laser printer or a color photocopy machine is composed of small, shiny particles of toner, which lay on the surface of the paper. Three or four colors of toner overlap to produce different shades of color, resulting in a layered effect on the surface of the paper. A scattering of minute toner particles, which are not visible to the naked eye, then covers the document. All of this layered toner gives the document a shiny appearance and a waxy feel. The image produced by an inkjet printer is composed of small drops of ink, which are absorbed into paper and have a flat appearance. In the instance of color inkjet printers, three or four colors of ink are superimposed on top of each other to produce different shades of color; however, unlike the color laser printer they are not layered and appear flat. It is difficult to create curved or diagonal lines with an inkjet printer. They have a step-like appearance.

Counterfeiters have always had difficulty in keeping their currency registered. Registry means the printing on the front of the bill is in alignment with the back of the bill. The printed area on the back of all bills is slightly smaller than the printed area on the front of the bill. If you view a genuine bill from the back against a light, you will notice that the printed area on the back is framed symmetrically by the printed area on the front of the bill. This is proper registration. Skewed or non-symmetrical registration is the first indication of a counterfeit.

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Currency Redesign

In an effort to thwart counterfeiters, the United States Treasury began distributing a new style of currency in March 1996, with the debut of the 1996 series $100 bill. The $50 bill debuted in 1997 followed by the $20 in 1998. Although the $20 bill represents on average only 21% of the total number of bills printed by the Bureau of Engraving and Printing each year, it represents approximately 60% of the number of counterfeit bills confiscated by the Secret Service.

The anti-counterfeiting characteristics of the new $20 bill include:

- "USA20" microprinting appears inside the number "20" in the front lower left-hand corner. (See Illustration 1)
- A watermark appears to the right of the portrait on the front of the bill. The watermark is identical to the portrait on the bill. The watermark is visible from both sides of the bill when viewed against a light. The watermark is created by altering the density of the paper. It cannot be wiped off. Counterfeiters replicate the watermark by printing the picture on the bill.
- Color-shifting ink is used to create the number "20" in the front lower right-hand corner of the bill. On an original bill it appears green when viewed straight on and changes to black when viewed at an angle. (See Illustration 2)
- Fine line printing is present in the backgrounds of both the portrait on the front and the building on the back of the bill. It is difficult for photocopy machines to reproduce these lines congruently (with perfect registration). (See Illustration 3)
- An enhanced security thread runs vertically through the bill. The thread is visible when held up to a light source. The thread reads "USA TWENTY", with a small flag with the numeral "20" where the stars should appear. When this thread is viewed under ultraviolet light, the thread glows green. (The thread glows red on the $100 bill and yellow on the $50 bill.) (See Illustration 4)
- Microprinting* surrounds the bottom of the portrait reading, "THE UNITED STATES OF AMERICA (See Illustration 5)
- Red and blue fibers* are imbedded in the paper. Counterfeiters replicate the fibers by printing them on the surface of the paper. (See Illustration 6)
- Starch-free paper* is used for all bills.
- Intaglio printing* except for the serial numbers, Federal Reserve seal and the Federal Reserve number.
- The ink is "Never-dry" ink* that can be rubbed off. Note: some laser toner and inkjet printer inks also rub off. This characteristic was intended to thwart counterfeit bills produced by lithography.

*Designates characteristics present in past series of bills.

Conclusion

The $20 bill is replacing older notes gradually. However, unlike the new $50 and $100 bills, old $20 bills still in good condition will be re-circulated. Until the newly designed $20 bill becomes ubiquitous, and completely replaces the old one, it will be the counterfeit bill of choice.

Endnote:

1. *Computers, Printers a Boon to Counterfeiters*, Reuters News Service, March, 31, 1999.

References

1. The Department of Treasury Public Affairs Office, *U.S. Treasury and Federal Reserve Introduce New $20 Bill*, Treasury News, May 20, 1998.
2. Fraud Update, *New U.S. Currency Making Circulation*, The White Paper, January / February 1999.

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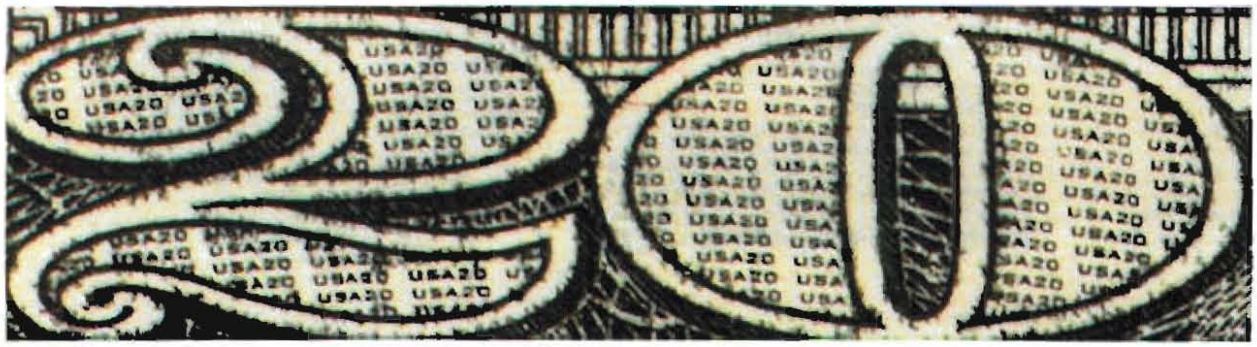

Illustration 1

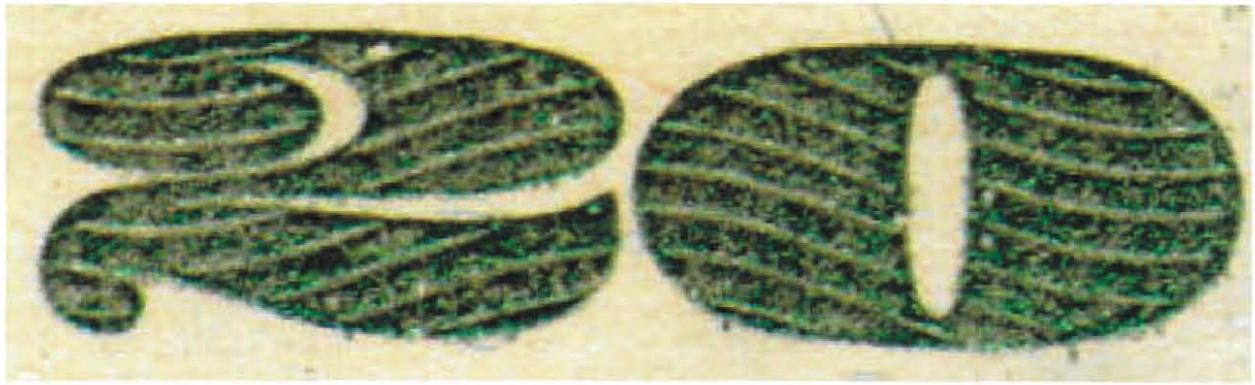

Illustration 2

3. Hecker, Jayetta Z., *Counterfeit U.S. Currency Abroad: Observations on Counterfeiting and U.S. Deterrence Efforts*, General Accounting Office Report Number: T-GGD-96-82, February 27, 1996.
4. Reuters News Service, *Computers, Printers a Boon to Counterfeiters*, March 31, 1999.

Sgt. Joseph Rosowski has been the Questioned Document Examiner for the City of Philadelphia Police Department since 1988. As the sole Questioned Document Expert for the City, he receives cases from the Police Department, District Attorney's Office, City Solicitor's Office, Inspector General's Office, Prison Internal Affairs Division and various Federal/local task forces. Sgt. Rosowski handles 320-350 document cases per year on average.

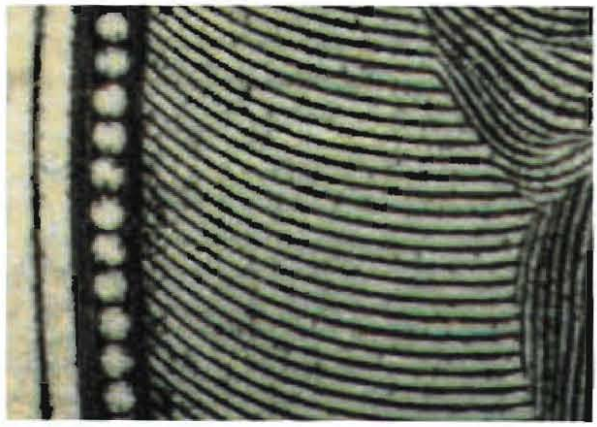

Illustration 3

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Illustration 4

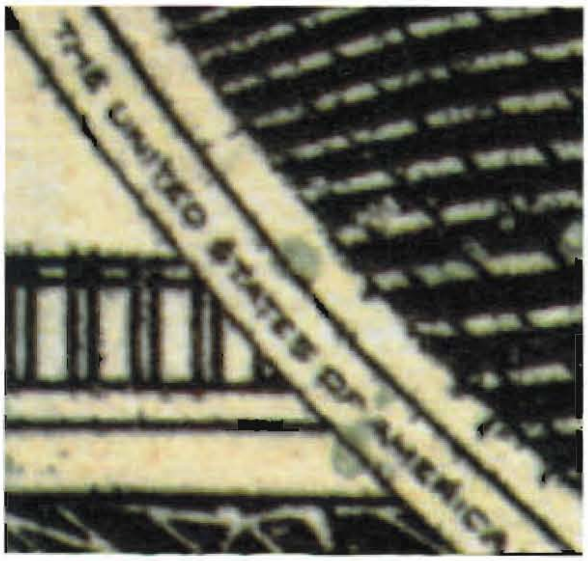

Illustration 5

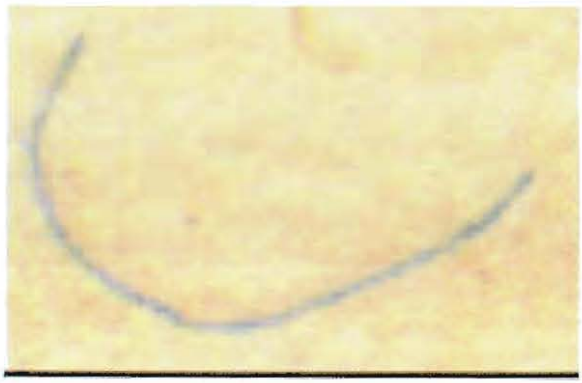

Illustration 6

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COMPARISON OF HANDWRITING IN FEDERAL COURT BY THE TRIER OF FACT

by

Marcel B. Matley

ABSTRACT: In Federal Court the jury, or judge in a bench trial, may make a handwriting comparison even if no witness has testified about handwriting identification. A survey of some cases is given to illustrate that the trier of fact may make such a comparison during deliberations, after presentation of evidence by both parties is closed.

KEY WORDS: Case law; Jury comparison of handwriting; Judge comparison of handwriting.

INTRODUCTION: Among the States, some have rules that a jury, or judge acting as trier of fact, may not make a comparison of handwriting unless a witness has testified on the matter. For example, see item 15, *Clark v State*. However, the question arose recently in a Federal case whether the judge in a bench trial could do so. In researching relevant cases back to the 1800s, it was found that there need not be a witness as to handwriting for the trier of fact to make a comparison of handwriting. Even criminal cases were found in which conviction was based on the trier of fact making a comparison of handwriting without the aid of a witness as to handwriting, whether a lay or expert witness.

In fact, the trier of fact makes the comparison during deliberations, in privacy, in chambers or the jury room, away from the parties' opportunity to cross-examine what seems to constitute ex parte expert evidence in a Star Chamber setting. In all the Federal cases discussed it was ruled that the trier of fact properly made a comparison. There was no indication as to what guided the trial court in deciding whether the exemplars were appropriate either as to quality or quantity. The exception is *Hickory v U.S.*, item 7. In most cases the reports do not indicate what were the observations or reasoning upon which the opinion of the trier of fact was based. An exception to this is *Hardy et al. v Harbin et al.*, item 3.

The Court Cases in Chronological Order:

1. *Luco v U.S.*, 23 How 515, 16 L Ed 545 (1860). The plaintiffs in this case claimed ownership of a large land grant in California, a grant allegedly given under the former Mexican rule. The court noticed the lack of credibility in some of the testimony and witnesses. For example, an old man purportedly parted with the valuable land grant for a comparatively paltry sum. Also, it was about twenty years after Mexican rule had ended that the claim was finally brought forth.

For our interests, the important feature is that the appeals court properly made its own comparison of handwriting and finding of fact on the question of forgery. At 550, the appeals court said: "We have ourselves been able to compare these signatures by means of photographic copies, and fully concur (from evidence 'oculis subjecta fidelibus') that the seal and the signatures of Pico on this instrument are forgeries...." "Oculis subjecta fidelibus" is Latin which literally translates as "subjects of believable eyes." Colloquially it can be translated as "seeing is believing," or "we saw it for ourselves."

2. *Medway v U.S.*, 6 Ct Cl 421 (1870). A British lady living in the South during the Civil War maintained that she gave no aid to the rebels. Partly on that basis she claimed property confiscated by federal agents as being her own. After the Civil War there was a law which said that anything which belonged to the Confederate Government was property of the United States and could be confiscated. Anyone wanting to claim confiscated property as being personal and not Confederate Government property, had to bring suit.

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Having given aid and comfort to the Confederate Government or not was a factor in deciding whether the claim should be granted. Mrs. Medway had assisted Union soldiers in making their way back to Union lines. After the War, she had to move to the Midwest because her neighbors resented that and other pro-Union acts by her. To counter evidence of this, the Federal attorney brought forth a letter from Confederate archives, signed with her name to President Davis, which purportedly showed she had given aid and comfort to the Confederacy.

Not denying Mrs. Medway's good deeds for the Union, the defendant Government asked the court to compare the signature on the letter with her signature on her original petition to the Court of Claims. The Court found the signature on the letter to be genuine and admitted it into evidence.

In the reported decision, the Court reviews the history of handwriting comparison. Common law permitted the trier of fact to make comparison of the admitted or proven writings, which were already in the case for another reason, with writing which the person denied. No other comparison was permitted by common law.

The dissenting opinion argues against court comparison of writings because, among other reasons, it gives expert evidence without being subject to examination. The dissenting opinion concludes at 447: "If the United States is not willing to be tried by the same rules of law that are applied between man and man, this court had better be abolished." However, as we will see, precisely that rule on comparison of handwriting by the trier of fact even today remains the rule of law applying between individuals.

3. *Hardy et al. v Harbin et al.*, 154 US 598, 22 L Ed 378, 14 S Ct 1172 (Cir CA 1874). At 381 we read about an 1843 prayer for a Mexican grant of a ranch in California. The writing was compared to a writing made in Canada in 1831, the comparison being made in 1864. The Court said: "Hardy was a mechanic, not much accustomed to writing while at home, and his signature to the note is of that stiff, unpracticed character common to the signatures of such men. Although the letters proving the signature of Thomas M. Hardy are, in many instances, like those in the signature of John Hardy, the signature is in its general appearance more easy and flowing than that of John Hardy."

The Supreme Court in effect described the comparison it made of the handwriting. The Court's description of the typical writing of a mechanic who writes rarely is astute. Reference was made to what we would call class characteristics and to the degree of writing skill.

4. *Blewett v U.S.*, 10 Ct Cl 235; affirmed, 13 Ct Cl 556 (1874). The Court of Claims sitting as a jury may make handwriting comparison with or without the aid of an expert.

5. *Moore v U.S.*, 91 US 270, 23 L Ed 346 (1875). Headnote 1: "The Court of Claims, like a court of equity, may determine the genuineness of a signature by comparing it with other handwriting of the party."

6. *Williams v Conger et al.*, 125 US 397, 8 Sup Ct 933, 31 L Ed 786, Corpus Juris 22, 783 (Cir N.D. TX 1888). Only the jury can make a comparison of handwriting, and it may be asked to pass on the genuineness of the exemplars. Handwriting samples on documents in evidence in the case may be used by the jury as exemplars.

7. *Hickory v U.S.*, 151 US 303, 14 Sup Ct 334, 38 L Ed 170 (W Dis AR 1894). Reversed and remanded on grounds other than rulings concerning handwriting. The trier of fact may make a comparison of handwriting without the aid of experts. Handwriting samples on documents in evidence in the case may be used by the jury as exemplars. But the handwriting exemplar must

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be the person's usual, natural style to show the general character of his writing, otherwise it is not satisfactory as a standard.

8. *Bowers v U.S.*, 244 F 641 (9 Cir CA 1917). The jury may make a handwriting comparison.

9. *Smythe v Inhabitants of New Providence Tp., Union County, N. J.*, 263 F 481 (3 Cir NJ 1920). Predecessor statute extended the common law rule in regard to comparison of writings. Thus, the jury properly compared the purported signatures of commissioners on bonds with their signatures which appeared on their oaths of office, which had been admitted into evidence.

10. *Easterday v U.S.*, 53 Ap DC 387, 292 F 664 (1923), cert denied 263 US 719, 68 L Ed 523, 44 S Ct 181. It was not error to permit the jury to make a handwriting comparison, since a statute permits the trier of fact to do so.

11. *Citizens' Bank & Trust Co. of Middlesboro v Allen*, 43 F2 549 (4 Cir VA 1930). It was not error to exhibit to the jury the defendant's signatures written while on the witness stand. At page 551: "The second question, raised by proper exception and assignment, is to the action of the trial court, after Mrs. Allen had written her name at the request and in the presence of the court and counsel rapidly a number of times with a number of different pen points, and afterwards in her usual regular, and undisturbed way of writing, and again in the presence of the jury a number of times, in permitting the paper on which her signatures thus appeared to be exhibited to the jury for comparison." The court rejected the assignment, thus upholding the action of the trial court.

12. *Goins v U.S.*, 99 F2 147 (4 Cir VA 1938); certiorari granted, 59 S Ct 461, 306 US 623, 83 L Ed 1028; certiorari dismissed, 59 S Ct 783, 306 US 622, 83 L Ed 1027. The trier of fact may make a comparison of handwriting.

13. *Bowles v Kennemore*, 139 F2 541 (4 Cir 1944). The trier of fact is permitted to make a handwriting comparison between writings which the purported writer has admitted are genuine and those writings which the purported writer has denied authoring.

14. *Williston v Heritage Supply Co.*, 155 A2 253 (Mun Ct Ap DC 1959). Disputed documents may be admitted without first proving them, since they were admitted as disputed and receiving them was necessary to proving them. The court or jury may compare the disputed signature for the purpose of determining its genuineness. If such comparison is the only proof offered, it may not satisfy the trier of facts; but, if it does, a finding based thereon cannot be said to be without substantial support. The court need not be aided by an expert.

15. *Clark v State*, 114 S2 197 (FL Ap 1959), 80 ALR2 261. This case is included because of the annotation in American Law Reports. The Florida Appeal Court gives a brief history of handwriting opinion testimony. At page 265 it states that the jury may only compare handwriting with the assistance of expert or competent lay witness testimony. Since the Florida statute required that opinion testimony be based on comparison of handwritings, the Appeal Court inferred that an expert is required. At page 268: "In short, it appears that although the question is one of first impression, our Supreme Court has indicated without exception that the comparison of handwritings is an art which can be judicially practiced only by expert or skilled witnesses."

The American Law Reports annotation, authored by H. C. Lind, is titled: "Propriety of jury, or court sitting as trier of fact, making a comparison of a disputed writing with a standard produced in court, without the aid of an expert witness." It includes references to Federal cases.

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16. *U.S. v Cashio*, 420 F2 1132 (5 Cir LA 1969); cert. denied, 397 U.S. 1007, 90 Sup. Ct. 1234, 25 L Ed2 420 (1969). The jury may make a comparison of handwriting. There had been no proof by the prosecution of the genuineness of defendant's signatures on tax records. That was not grounds to grant a motion for acquittal. However, the defendant had testified that he had signed them, effectively abandoning his motion which was the basis of his complaint upon appeal.

By statute, there is a rebuttable presumption that tax records have been signed by the person whose name they bear. It was a prosecution for making false income tax returns.

17. *U.S. v Woodson*, 526 F2 550 (9 Cir CA 1975). Headnote 2: "In the absence of extreme or unusual circumstances, handwriting comparisons may be made by jurors and conclusions drawn from them, either in the presence or absence of expert opinion."

An expert could not say that Woodson had written the questioned writing, but it was proper for the jury to be instructed to make its own comparison and arrive at a conclusion.

18. *U.S. v Conley*, 4 MJ 327 (CMA 1978). Headnote 1 states that handwriting expert testimony was clearly admissible and constituted devastating proof.

The judge in the trial claimed training as a handwriting expert and considered his own opinion in rendering his verdict, but he did not take the stand as an expert witness. The conviction was reversed, since the judge should have disqualified himself.

The defendant's right to confront witnesses against him was eviscerated by the judge acting as a handwriting expert. However, we might well note that that is exactly what happens whenever any fact finder compares handwritings during deliberations and after presentation of evidence closes. The dissenting opinion begins at page 330 and asserts: "An accused has no constitutional or statutory right to an ignorant or inexperienced juror." The dissenter argued that, if the judge had had no training as an expert and had been completely incompetent to compare handwritings, the conviction would have been upheld. The appellant/defendant complained on the grounds that the judge was otherwise qualified to do what the law permitted him to do, qualified or not.

19. *U.S. v Alfred*, 10 MJ 170 (CMA 1981). A judge, in a non-jury trial, could make a comparison of handwriting and find the defendant guilty. See also *U.S. v Conley*, which is discussed above, where the same appeals court overturned the conviction since that judge confessed on the record that he could have qualified as an expert.

The military appeal court also noted that expert testimony would have been admissible, but it would not have been conclusive since the judge would have had to weigh the evidence anyway. Therefore, the defense argument that expert evidence should have been presented had no legal weight.

20. *U.S. v Clifford*, 543 FS 424, 10 Fed Rules Evi Serv 1424 (W.D. PA 1982); reversed on other grounds, 704 F2 86, 12 Fed Rules Evid Serv 870 (3 Cir PA 1983).

In the report given in 704 F2 86, headnote 4 reads: "Jury can compare known handwriting sample with another sample to determine if handwriting in latter sample is genuine."

Conclusion:

The trier of fact in many of the cases discussed used as few as one exemplar, something for which an expert opinion would be severely challenged. At times there were factors which might even have the expert evidence dismissed, such as a number

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of years lapse between the dates of the disputed and exemplar writings without justification for why more recent exemplars were not used. These are just examples of the technical reasons which make jury or judge comparison of handwritings problematic, when there has been no expert comparison evidence presented at trial and no cross-examination available to the side against whose interest the opinion of the trier of fact goes.

There is a far more serious problem with the practice. It cannot be emphasized too much that if the trier of fact makes a comparison without benefit of lay or expert witness, there would be no cross-examination to shake assurance in the opinion, to impeach the skill to do so, or to challenge the bases for the opinion. On that factor alone, ought not the rule permitting such an examination, which takes place completely out of the presence of the parties, be corrected, since it is the creation, introduction, admission and acceptance of evidence without any of the checks and tests to which all other evidence is subjected?

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THE NUMBER OF STANDARDS NEEDED TO WORK A DOCUMENT CASE: A CHALLENGE TO AN ARBITRARILY SET AMOUNT

by

Phyllis Cook, CDE

Although the terms "exemplars," "standards" and "known writing" have subtle, technical differences, they are often used interchangeably. Throughout this article the term "standard" shall be used to mean a valid sample of handwriting/signature that is used for comparison purposes.

Volumes, no doubt, can be written about standards:

admissibility of
alterations in
appropriateness
care and handling of
careless, hasty writing
cautions regarding
classes
collected
contemporary
copied
dictated
encountering disguise
extended writing
forms for
hand printing
health conditions
inadequate
in anonymous letter cases
inappropriate
informal
initialing
nervousness
not admitted
numerals
of a specific period
procurement or sources of
purpose of
quantity
request writing
same class of writing
school writing as
selectivity or choice
signatures as
similar writing space (background arrangement)
suspected
text for
the best
timeliness
time spanning
unavailability of
unprovable
variation in
variety of
verification of
volunteered
writing conditions for

Thus, this paper is limited to a discussion of the amount or number of standards needed. Somewhere along the way, someone arbitrarily decided that in order to a work a document case the examiner must have at least twenty-five specimens of valid handwriting for purposes of comparison. This document examiner personally insists on procuring as many standards as possible, but claims that the actual number does not matter. Yet it seems that lately opposing attorneys (particularly in the Delaware Valley area of the country) are questioning the number of standards being used, with twenty-five being their norm. Perhaps they read this somewhere. Perhaps they thought it sounded good.

This is where the author agrees with Albert S. Osborn:

> The amount of handwriting necessary for comparison differs in different cases, but, if possible enough should always be obtained to show clearly the writing habits of the one whose writing is under investigation.
>
> Several signatures should always be obtained, if possible, before any final decision is rendered, five signatures always constituting a more satisfactory basis for an opinion than one and ten being better than five. It is not often helpful to use more than twenty-five to seventy-five except in unusual cases and it is not usually desirable to use those of widely different dates if sufficient contemporary writings of the right class can be obtained. In many cases a few contemporary signatures furnish an adequate basis for a positive opinion and with certain distinctive and skillful writers one good standard signature is sometimes sufficient on which to base a preliminary opinion. [1]

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Not always is a large amount of handwriting accessible. Unless the clients have access to numerous canceled checks, they usually arrive with one or two standards or a bunch of greeting cards for us. How often we hear, "This is all I can get," or, "My Uncle Henry never did much writing." We have heard that documents have been destroyed in a fire, or buried at sea, or stolen, or mysteriously disappeared, or are in the hands of one who refuses to part with them. Surely, we have heard all the excuses. Often, they are true.

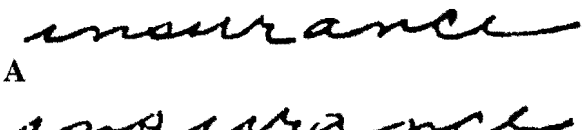
It is up to the professional document examiner to guide the client to sources where standards can be procured. And we admit that although they may not be the best (voting records, divorce papers, notebooks, signed agreements, driver licenses, etc.) at least we have some additional evidence to rely on. But try as we may, we cannot get blood from a stone.

This author thinks it is up to the discretion of the document examiner to determine whether or not s/he can conscientiously work with what is offered. In *Evidential Documents*, James V. P. Conway states:

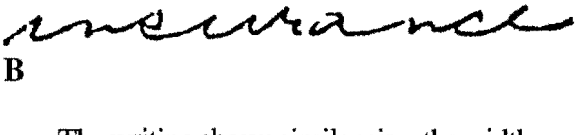
> Signatures, like their authors, vary greatly in their complexities and accordingly there is no binding rule of number which will suffice or even be necessary in every case.[2]

Furthermore, as handwriting experts, we can often look at two handwritten words and ascertain whether or not one or two persons penned them. This assignment sometimes arises in anonymous letter cases, where short threats are penned such as "Die!" or, "Watch out!"

Karl Aschaffenburg, the noted German document examiner, detailed how two handwritten words "insurance," (see following illustration) taken from two different documents, were written by different individuals when he lectured to the National Association of Document Examiners, Inc. in Princeton, New Jersey some years ago. There is no magic to this. It is a logical examination and comparison of the differences in movement, that he terms "the configuration of impulses."



A



B

> The writing shows similar size, the width of the letters is similar, and so is, in general, the slant too. The line has almost equal thickness, and the forms are not strikingly dissimilar. Even the alignment shows similarity. If we rely solely on the forms we see, we would not be justified to state with assurance that the two words were written by two different people. Certainly, we would encounter difficulties in court to make a convincing statement in a case where the similarities are so conspicuous. "If we rely solely on formal comparison, we will have to decide whether the differences we see, e.g., the uninterrupted writing in sample 'A,' and the one interruption between the 'r' and 'a' in sample 'B,' or the different connecting forms, outweigh the similarities. We must here keep in mind that, while different connecting forms mean something to a [handwriting expert], to a lawyer or judge such distinctions may not be impressive. It is at this point that the actual analysis of the writing has to set in. We must reconstruct the movements the writers have made.[3]

Then Mr. Aschaffenburg continues with a lengthy discussion of the dissimilarities between the two, and he makes a compelling case. If you are challenged as to the number of standards you used, let the questioning attorney know what the ex-

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perts state. Refuse to be intimidated. As a working professional in the field of forensic document examination, you certainly know that you had a sufficient number of standards upon which you based your opinion. The amount of standards has not been fixed by rules, but left to the discretionary wisdom of the examiner.

Footnotes:

1. Albert S. Osborn, *Questioned Documents*, Second Edition, Nelson Hall Co., Chicago, page 27.
2. James V. P. Conway, *Evidential Documents*, Charles C. Thomas, Springfield, page 96.
3. Karl Aschaffenburg, *Collected Essays on Various Aspects of Handwriting Examination*, page 17.

Phyllis Cook is a court qualified, board certified forensic document examiner. As a teacher in the Philadelphia elementary schools, she became interested in handwriting while teaching children to write. In 1972, she left the teaching profession to start The Philascript Co., Inc., and in 1979 she co-founded NADE. She has lectured throughout the country, taught the subject on television, apprenticed students on the forensics of document examination, and authored numerous articles and several books. Although her sense of humor is known to most, she is deadly serious about her profession and the ethics of those who are experts in the field.

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A DISCUSSION OF DANDY ROLLS AND WATERMARKS

by

Robert Johnson as told to Emily Will, CDE

A multi-page agreement, allegedly signed and dated in 1975, was presented for examination. On each sheet of paper was a watermark bearing the name of the paper company and information about the paper's fiber content. Close examination revealed a "stray" mark that seemed to be part of the watermark. Each sheet of the document had a similar mark, but not always in the same position. H. M. Spencer Company, a manufacturer of dandy rolls that are used to add watermarks to paper, was contacted. With information on file at the company, it was possible to report that the paper comprising the document was manufactured in 1974 and 1975, with the exception of a single sheet (not the signature sheet) that was manufactured in 1979. After this landmark watermark experience, Mr. Robert Johnston, owner of H. M. Spencer Company, was contacted and graciously agreed to be interviewed for this article.

In 1986 Mr. Henry Matthew Spencer left England to settle in America. He founded the H. M. Spencer Company, which is the oldest and best known manufacturer of dandy rolls in this country. In 1956, his descendant Henry Matthew Johnston wanted to continue manufacturing dandy rolls, but he was eager to be self-employed. He evaluated his options and chose Maine, with its many paper mills, to begin a new company. The Johnston Dandy Company thrived and grew. A small shop in Montreal was acquired to service Canadian accounts and The E.F. Cook Company in Syracuse, New York, was purchased to serve the cylinder mould industry. In 1993 Robert Johnston and his brother Daniel, sons of Henry Matthew Johnston, purchased the original H. M. Spencer Company which then merged with the Johnston Dandy Company.

The dandy roll was developed in England to aid in the formation of a fine sheet. Legend has it that in its development trials a papermaker was impressed with the new roll's performance and declared it a "dandy." A modern dandy roll is a lightweight cylindrical framework covered with wire cloth. It runs on top of a "web" of paper during the paper formation process. A web of paper is 96%-97% water and 3%-4% fiber. At this critical point in the manufacturing process the dandy roll is used to mechanically align the fibers to produce a smoother, more consistent sheet of paper. When a dandy roll has a watermark added to the smooth wire cloth surface, the watermark will change the density of specific areas to darker or lighter tonalities of the sheet. A raised watermark displaces fibers leaving a pattern that is lighter than the surrounding sheet while a shaded watermark collects extra fibers producing an image darker than the areas around it.

Watermarking is an ancient craft that has survived because of its usefulness. Watermarks serve to distinguish one paper product from another, either as a symbol of organizational pride, as a marketing strategy, or as a security feature. A watermark is very difficult to counterfeit because it is actually a part of the paper, not an added printed feature. This is what makes a watermark an excellent security feature and accounts for the increasing use of watermarks today.

The dandy rolls for American currency are produced by technicians trained at H. M. Spencer at the mill where the paper is manufactured for security reasons. However, H. M. Spencer did supply dandy rolls for the new currencies that were issued after the breakup of the Soviet Union, and the company continues to produce dandy rolls for bank checks, government papers and lottery tickets that are used around the world. Corporations such as McDonald's use watermarked pa-

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per for their gift certificates and prize coupons. And, of course, document examiners use watermarks to date documents.

Watermarks can be used to help date a document because of the extensive files kept by dandy roll manufacturers and paper companies. A few paper mills actually hide a date mark in their sheet, and move it annually, as in the case mentioned at the beginning of this article, while other mills and private companies may use a watermark for many years without a change. Paper may be kept for many years before it is used, so a dated sheet does not pinpoint the age of a document but it can prove forgery when a sheet has a printed date that predates the production date indicated by the watermark. Fortunately for the document examiner, the Spencer Company is willing to take the time to assist with these important matters when time allows.

Addition of a watermark to a modern papermaking production line does require a certain scale of activity to justify the cost. A paper company will typically expect a customer to order 5000 pounds of paper to cover the expense. The minimum order might be more than that if newer, wider, faster papermaking machinery is to be used.

H. M. Spencer Company is involved with its customers in the design of their watermarks . A printed image must be transformed into a design that will work as a watermark. The graphic designers at H. M. Spencer must take many variables into account. Production and materials issues must be considered. Varying degrees of detail can be achieved depending on the speed of the papermaking equipment and the structure of the paper. A machine that produces 200 linear ft. of paper per minute can have a much more intricate mark than one that produces 1500 linear ft. in the same time, and a sheet of bond paper can hold a more complex mark than a sheet of "bible" paper. Opaque paper, such as card stock, cannot display a watermark.

As in most modern manufacturing processes, the past decades have brought modifications and improvements. Production lines have more sophisticated drives. Varying meshes for the dandy rolls are available to accommodate specific requirements of papermaking machines. New sizes of dandy rolls can be made. A large roll used to be 20" in diameter, but now they are made as much as 60" in diameter. Whereas 30 years ago bronze was the predominant metal, now stainless steel is used because it is more rigid and easier to clean.

A quick search on the Internet brings up some interesting facts about watermarks that clues us to what we might expect in the future. Digital watermarking is a new technology that pertains to electronic documents and is designed to minimize theft of intellectual property. This technology does not replace watermarks on paper, but rather gives a similar cachet and protection to documents that are never actually printed on paper, but exist only on a hard drive or monitor.

In 1996 a conference on Watermarking was held in Blacksburg, Virginia. Several interesting presentations offered information on work being done to catalog and archive information on historical watermarks. There are on-line databases that can be searched. While the information given referred only to watermarks and their use in validating historical documents such as works of art, librettos, and musical scores, it would be easy to imagine a similar database that might be helpful to document examiners. Perhaps there is a 5th or 6th generation Spencer or Johnston who will work on this some time in the future.

Emily Will, M.A., CDE, is a Certified Document Examiner and Editor of the NADE Journal. She has an MA in Guidance and Counseling from Syracuse University. Her QDE website, posted in October of 1995, was among the first QDE sites on the Internet and has brought her cases as distant from North Carolina as Texas, Utah, California and China. She has testified in state and federal courts and been appointed by both state and federal courts to examine documents.

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IDENTIFICATION OF HANDWRITING BY INDIVIDUALS WITH MPD/DID

by

Carol Myers

INTRODUCTION: In a 1994 publication of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders IV*, the term Multiple Personality Disorder (MPD) was changed to Dissociative Identity Disorder (DID). Although not a prevailing health problem, "current research shows that DID(MPD) may affect 1% of the general population. These statistics put DID/(MPD)/DD (other Dissociative Disorders) in the same category as schizophrenia, depression, and anxiety, as one of the four major mental health problems today." It is well known that an individual's medical history, both physical and mental, has a profound effect on his/her handwriting.

Forensic document examiners specializing in handwriting identification are familiar with the effects of drugs, alcohol, age and illness on an individual's handwriting. Research has been conducted in these areas providing the examiner with the knowledge necessary to make determinations when characteristics related to these factors are present in the handwriting. Research into the unique handwriting of MPD/DID individuals is also necessary and will heighten the document examiner's awareness and broaden the document examiner's educational background concerning this mental health condition.

What Do The Experts Say?

"A person diagnosed with DID(MPD) has within her two or more entities, or personality states, each with its own independent way of relating, perceiving, thinking and remembering.... Other terms often used by therapists and survivors to describe these entities are: ...'alternate personalities', 'alters,' ...." But can we prove independent handwriting characteristics in these multiple personality states or are they linked together, proving the identity of just one writer?

Writing skills are imbedded into an individual at an early age, becoming subconscious skills that remain with that writer throughout a lifetime. An individual suffering from MPD/DID creates and stores memories at different levels and through different entities, as the case may be. Some MPD/DID individuals begin to develop separate entities within the host as early as age three. Can we then assume that the subconscious memory of learned handwriting skills will be fractured; and the handwriting characteristics of the different entities will not be identifiable as having been written by the same host?

Ralph Bradford, in his book *Introduction to Handwriting Examination and Identification*, relates a personal experience his father had with multiple personalities in a routine fraud-by-forgery case. In the case of Clarence M. Noonan, Mr. Bradford was asked one final question by the defense attorney: "'If Mr. Noonan was a man of multiple personalities, could a second personality have written the writing you failed to identify?' The answer to this question lies, once again, in the theory that the mind does the writing and in the research done on handwriting of multiple personalities." Although Bradford does not directly answer this question, research findings and theory clarify that even though an individual may have multiple personalities, s/he has only one mind; and, that mind will retain the characteristics learned and will write in the style it has learned.

Another case of interest cited by Bradford in his book relays the conclusion reached by Ward S. Atherton, chief questioned document examiner for the criminal investigation laboratory at Camp Gordon, Georgia, as follows:

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> As a conclusion of the opinions derived from analysis of the various handwriting of this multiple personality patient, it is believed that the handwriting does not undergo complete subordination to each marked change of personality, even though each group exhibits evidence of emotional instabilities. It readily appears the handwriting of each personality is of a different person. Such apparent or discernible variations may lead the untrained observer to believe that the handwriting of each personality is completely foreign to the other. However, extensive investigation of these handwriting materials establishes beyond any doubt that they have been written by one and the same individual.

W. Melcher addressed handwriting and MPD in 1920. The obvious relationship between the handwriting and the individual personalities was described as follows:

> In each of the personalities, his thoughts, words, and deeds are perfectly natural to him for the time being, and are in no sense a voluntary disguise; . . . the handwriting variation is such that one who is well acquainted with a person's style of writing would utterly fail to recognize the same person's writing.

Jane Yanks' study reaffirmed that "The variations in written material produced by alters of MPD patients, therefore, often reflect differences in content and tone as well as handwriting form and style."

Disguise and variation are both addressed by the foregoing handwriting experts, concluding that the disguise of an MPD/DID individual is not voluntary and the variation in the writing may be extreme and unrecognizable.

Forensic handwriting expert Ordway Hilton surmises, "Variation does not preclude identification in the writing." On the subject of disguise in general, Mr. Hilton states, "The usual result of these attempts [to disguise] is effectively to eliminate prominent characteristics but to leave numerous unconscious, but individual, writing traits."

Finally, Osborn states, "Even in the uncommon case in which an individual exhibits markedly different styles of writing, the questioned document examiner may conclude that the writing styles share critical identifying features after applying forensic methods for comparing handwriting characteristics."

A Case Study:

Provided herein is a handwriting sample of a diagnosed MPD patient for review and examination. For privacy purposes, the sample is not produced in its entirety, but excerpts are provided for inspection. This one page of handwriting reveals the identity of five different alters, or personality states. We are provided with cursive writing, other-hand writing, and printscript for purpose of identification. Unfortunately, this limited amount of handwriting does not enable the document examiner to reach a definitive conclusion of authorship, but does provide an opportunity to examine a unique handwriting specimen of an individual diagnosed with MPD/DID.

Keep in mind Phyllis Cook's theory: "Persistent characteristics are bound to emerge in one's writing whether it be in printscript or cursive writing or an attempt to disguise one's handwriting. One's individuality, one's uniqueness, emerges in one's handwriting." We now begin to identify how many writers exist with regard to the following five samples.

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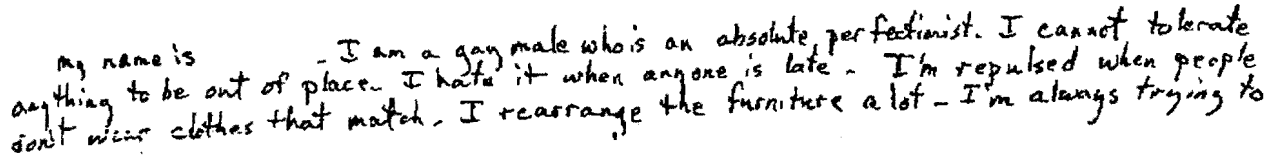
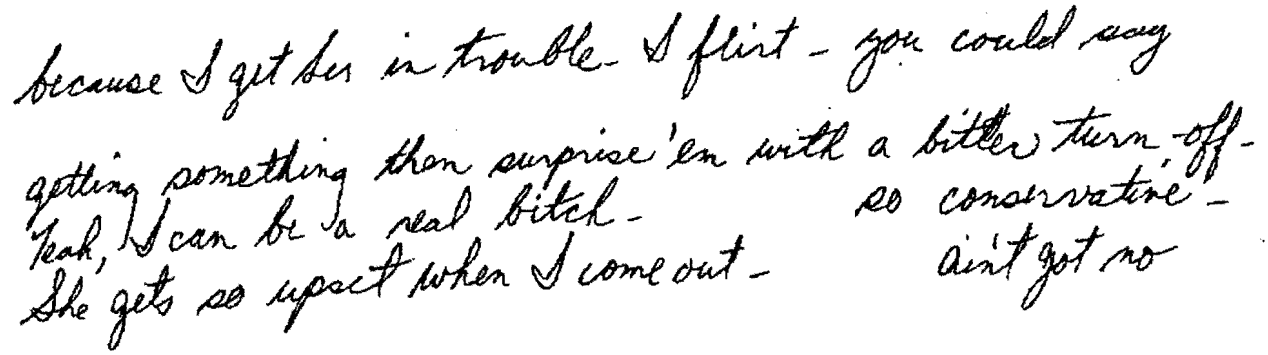
Entity "A" is illustrated below. This printscript is defined with upper, middle and lower zones of writing. This is the smallest in size and has the following individual identifying characteristics: (i) star shaped t-bar crossing, (ii) lower zone extensions on g and y, (iii) hooked t-bars, (iv) curved terminals on m and n, (v) punctuation in the form of dashes instead of periods, and (vi) the curved foot of the capital letter I.



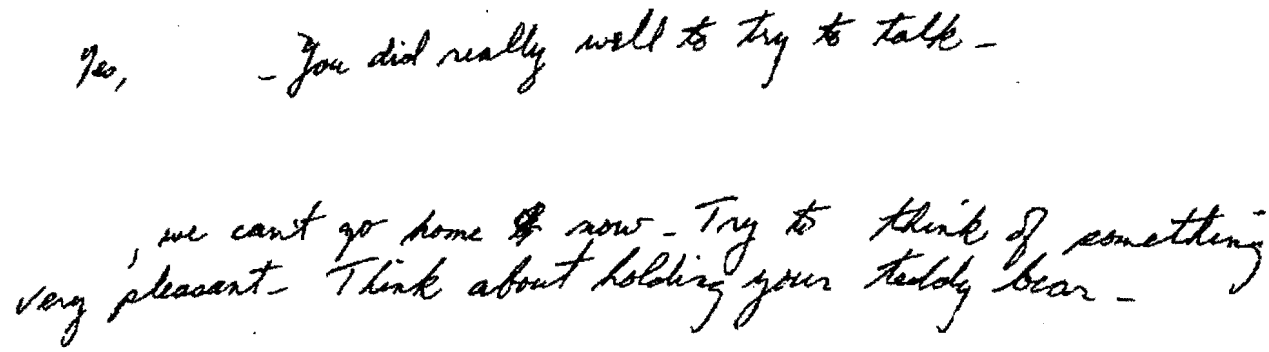
Entity A

Next is entity "B." The illustration is a cursive script which bears a visual resemblance to additional script discussed below. The individual identifying characteristics in this handwriting are: (i) the dash form used as punctuation, (ii) the initial stroke on the letter g, (iii) the heart-shaped form of the letter I, (iv) the unusual letter form h in the word her, (v) the hooked lower zone extensions on letter g, and (vi) the capital Y in Yeah.



Entity B

Entity "C," as seen below, is a smaller version of cursive script. Identifying characteristics surface as: (i) the combination letters "to" with the star t-bar crossing, (ii) the initial stroke of the letter g, (iii) the hooked lower zone extension on the letters y and g, (iv) the capital Y in the words Yes and You, and (v) the dash used for punctuation.



Entity C

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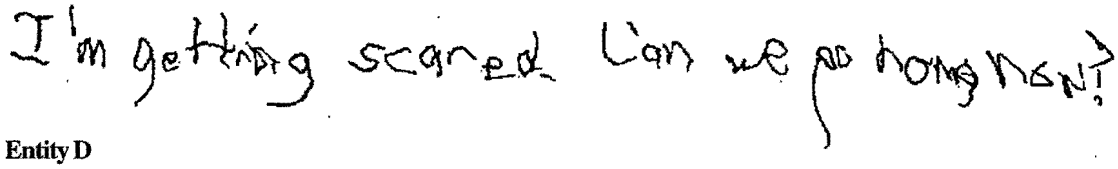
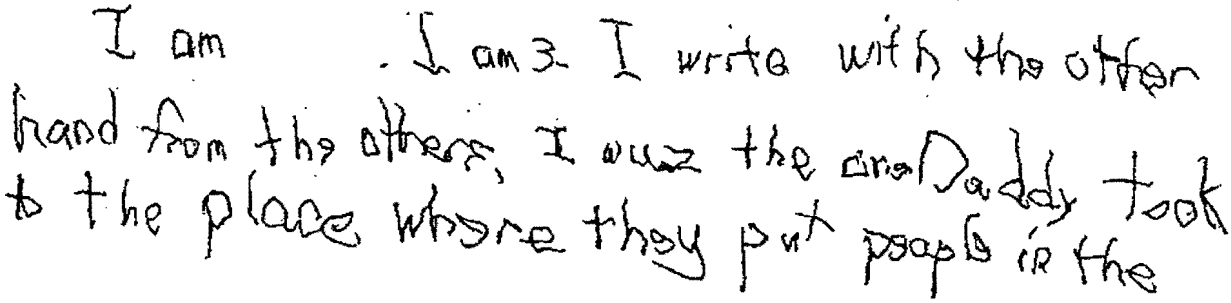
Entity "D." is by far the most unusual in these handwriting samples. This is an opposite-hand script. While exhibiting tremor, the individual characteristics appear in the dashed periods and the lower zone portion of the letter g in the word go.



Entity D

Finally, entity "E" is introduced with a very limited amount of cursive script. However, the individual characteristics do appear in the dashed punctuation and the "to" combination with the airstroke connection to the t-bar crossing.



Entity E

It is also necessary to look at the entire page of writing to determine arrangement of the writing on the paper as additional useful information for identification. Margins, alignment, spacing and indentations are writing habits that factor into the identification process.

While not available for publication due to privacy of the writer, the identifying characteristics are established in this specimen in similar paragraph indentations and similar spacing between lines, letters and words. This spacing adjusts with the changes in the size of the writing. Margins, both left and right, provide another similarity in the habit of this individual's writing. Proportions of upper, middle and lower zones remain comparable in relation to the size of the writing.

While this examination provides five standards for comparison, the accurate determination of the fundamental qualities and habits of the writer is limited due to the amount of writing available for review. Adequate specimens, if available for publication, would establish the range of variation disclosing the natural habits and individual qualities of the same writer.

Conclusion:

MPD handwriting can often be linked to one individual writer though individual characteristics, provided there are adequate known standards for comparison.

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The retention of characteristics is therefore established as an important fact. A person retains his characteristics over a period of time, even if he uses artificial hands, writes with his mouth or backwards, is a subject of *multiple personalities* (emphasis added), or is under hypnosis. The mind does the writing, and its characteristics remain fairly constant from early maturity through the remainder of a person's life.

As document examiners, we must be continually exposed to elements of human psychology that may affect handwriting and the identification of it. Through this research paper and exposure to these and other unique elements of handwriting, we can continue the ongoing education process that defines the document examiner as an expert in the field of handwriting identification.

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Carol Myers is a document examiner specializing in handwriting identification. She operates Handwriting Identification Services from her home office in Spokane, Washington. She is a Certified Paralegal with 20 years experience in civil, criminal and commercial law.

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SIGNATURE OF THE FUTURE: THE EYES MAY HAVE IT

by

Herbert R. Fineburg

What's a Picasso without the distinctive Picasso signature? Why do fans mob Eric Lindros, begging for his autograph on their Flyers jerseys? And what was the big deal when John Hancock scratched his "John Hancock" on the Declaration of Independence?

A person's signature, while not as unique as a biometric measurement, is a legally accepted mark of assent. Throughout the millennia the handwritten signature worked just fine, so long as communications traveled no faster than the average horse. The new millennium will, of course, change that. Electronic commerce, traveling at cyberspeed, is changing the face of business and requires a new kind of signature. There is no effective way to "sign on the dotted line" of a computer screen to complete or authenticate a business transaction. For electronic commerce to grow, digital, or more accurately, electronic, signatures have been developed using technologies such as biometrics to replace handwritten signatures.

Biometrics is a group of proven technologies that identify or verify individuals based on physiological characteristics. Biometric technologies include products that recognize faces, hands, fingers, signatures, voices, fingerprints and irises.

Computer technology is used in noninvasive ways to match the patterns of individuals in real time against enrolled records. Simply stated, biometrics provides authentication and prevents identity theft to an extent never achieved by handwritten signatures. Biometrics is most commonly used to safeguard international borders, protect computer network security, control access to sensitive data or work sites, authenticate financial transactions including retail sales, verify time and attendance and prevent benefits fraud.

For law offices, Biometrics can secure access to certain offices, areas or floors within an office where sensitive client or law firm materials are stored and limit access to computers and certain confidential computer files. Eizen Fineburg & McCarthy represents IriScan, Inc. a Marlton, N.J.-based company that pioneered a biometric technology that images (with video) a person's iris to create an Iris Code, a record used to identify an individual. Every individual's iris is unique, even those of identical twins. The iris pattern is processed, encoded and stored in a database to be used later for recognition in any transaction when a person's live iris is presented for comparison. IriScan(r) technology is presently being incorporated into ATMs.

John E. Siedlarz, President and CEO of IriScan, Inc. is also a founder and vice-chairman of the International Biometric Industry Association in Washington, D.C. Siedlarz, along with several state attorneys general and other industry representatives, recently testified before Congress on the need for using electronic signatures when contracting in electronic commerce on the Internet. With the technology in place, regulations to monitor it must now be established to allow for the smooth, uninterrupted flow of electronic commerce.

The law regarding electronic signatures now has to catch up with the available technology. Pennsylvania and New Jersey do not have laws regarding electronic signatures, although there is pending legislation. More than 40 states have enacted legislation regarding digital or electronic signatures. However, lawmakers have stated that a federal law is needed to avoid confusion and inconsistencies in state statutes making them difficult to enforce across state lines.

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To that end, a House Commerce subcommittee meeting was held recently on H.R. 1714, The Electronic Signatures in Global and National Commerce Act (E-SIGN), a measure that will facilitate the use of electronic contracts and electronic signatures in interstate and foreign commerce. H.R. 1714 creates the legal framework for accepting electronic signatures and records in interstate and international commerce. Section 101 lays out a general rule that "any contract or agreement entered into or affecting interstate or foreign commerce, that is required by any statute or regulation to be in writing or to use a written signature shall not be denied validity solely because it is in an electronic format." The legislation lays out a single, national standard for the acceptance of electronic signatures and records. However, the legislation neither chooses nor promotes a specific type of electronic authentication (i.e. voice, fingerprint or iris identification) stating, "technological neutrality should be observed among providers and technologies."

Congressional hearings were held in early June regarding H.R. 1714. House Commerce Committee Chairman U.S. Rep. Tom Bliley, R-Va., expressed his support for the legislation. He is hopeful the bill will be out of Committee and onto the House floor before the end of the year.

"The technologies used to create and transmit electronic signatures provide much greater safety and security to on-line transactions," Bliley said. "It is clear that for unfettered interstate commerce to take place, we must establish a single nationwide standard," he said. This legislation is a significant step toward the acceptance of "electronic commerce." It is important that technological and business neutrality be maintained so private parties can choose the forms of electronic signature that work best for them.

Mistrust of electronic signatures is one of the biggest barriers to the growth of electronic commerce. H.R. 1714 (if passed) fixes the problem by ensuring electronic signatures will carry the same legal protections and guarantees as written signatures. H.R. 1714 is intended not to interfere with the state laws enacted.

Fineburg states, "...in order to deal with the inconsistency in the current state laws, the National Conference of Commissions on Uniform State Laws has recently proposed for final approval at its July 1999 meeting the 'Uniform Electronic Transaction Act' which covers electronic signatures, electronic contracts and governmental electronic records." Signed, sealed and delivered in cyber-seconds.

Herbert Fineburg, Esq., of Eizen Fineburg & McCarthy LLP, in Philadelphia, PA., is a 1976 graduate of the University of Missouri School of Law. He received his LL.M. in Taxation in May of 1982 from New York University School of Law. Mr. Fineburg recently authored articles and has served as a faculty panelist and moderator for numerous seminars for the Pennsylvania Institute of CPAs.

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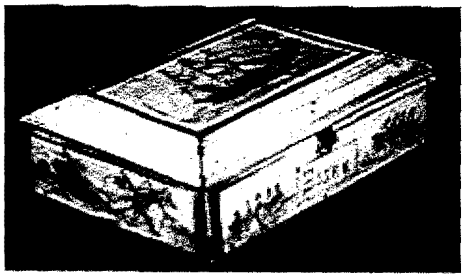
CASE NOTES

THE STUFF BOX

by

Willa W. Smith, EdD, CDE

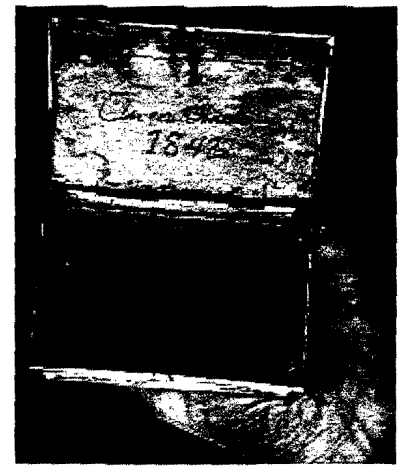
Sometimes a document examiner is privileged to work on a case that might be of some historical significance. In this case, a very old box no bigger than a deck of cards was presented with a question of authenticity of the writing inside.

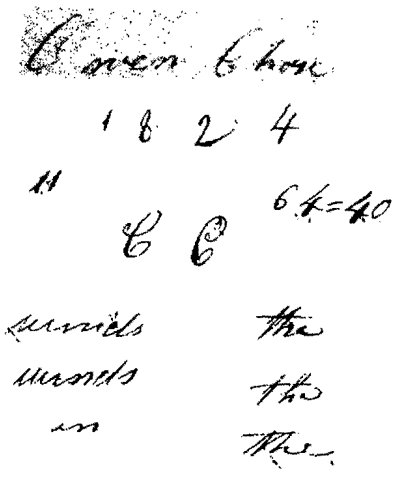


The box (called a stuff box) was of thin wood, with ivory overlays carved with whaling scenes (called scrimshaw), brass hinges, and paper lining on which was written "Owen Chase 1842." A bit of authentic writing of Owen Chase was given for comparison. If the writing matched, the box would of course be much more valuable than just a box with scrimshaw, as Owen Chase had written an account of a real whale attack that Herman Melville later used in his novel *Moby Dick.*

Owen Chase was First Mate on the whaling ship Essex in 1820, when it was rammed and sunk by a huge whale. He and a few others were adrift in the South Pacific for three months of storms and starvation. His story, *Narrative of the Most Extraordinary and Distressing Shipwreck of the Whale-Ship Essex,* is a sobering account of survival.

More known writing had to be acquired, and for this a trip was made to Nantucket, Massachusetts, Chase's home. Visits to the whaling museum and the Nantucket Athenaeum and Historical Association produced only one more exemplar. There were no other records with his writing because of a fire in 1829 that destroyed most of the town of Nantucket. More history was learned, however, including the fact that in his later years, Captain Owen Chase would buy not just one, but two or three of every food item. Having gone through that period of starvation, he was afraid of not having enough to eat.





Comparing the writing and numbers, what would you tell the owner of the stuff box? This author's opinion was "not authentic."

Willa Smith, CDE, has a doctorate in Educational Psychology from the University of Massachusetts, where her research revealed connections between handwriting and creativity. A former teacher, she has lectured and written articles on handwriting analysis, document examination, research, and language usage. Ms. Smith has served as proof editor for the Forensic Examiner (ABFA), and as co-editor of the Human Graphics Center newsletter and the NADE Journal. Recently she testified in court as an expert in language and grammar as part of a high profile case. She was certified by NADE in 1992.

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CASE NOTES

DOCUMENT MANIPULATION

by

Linda Collins, CDE

The parents of a deceased infant brought suit alleging that they had not given permission to embalm the infant's remains. The parents were suing the funeral home and the hospital. The defendants produced an original handprinted, penciled note bearing the information seen at Illustration 1 that included "CHILDRENS HOSPITAL," "4 MONTHS OLD" AND "OK TO EMBALM" by which the parents had agreed that their child's remains could be embalmed. In support of their allegations, the plaintiffs produced a photocopy of the document in Illustration 1 but without the words "CHILDREN'S HOSPITAL," "4 MONTHS OLD" AND "OK TO EMBALM." (See Illustration 2)

DIED 090895 - 12:21
CHILDRENS HOSPITAL
TAYLOR BROOKE GAJAK
4 MONTHS OLD
4431 SAN FERNANDO
75070
529-1233 30"
OK TO EMBALM
MOTHER - LESLIE
FATHER - TONY

Illustration 1

DIED 090895 - 12:21
TAYLOR BROOKE GAJAK
4431 SAN FERNANDO
75070
529-1233 30"
MOTHER - LESLIE
FATHER - TONY

Illustration 2

The question posed was whether the photocopied document without the words "CHILDRENS HOSPITAL," "4 MONTHS OLD" and "OK TO EMBALM," had as its original source the hospital and funeral home's document as it is presented in illustration 1. Or, in other words, were the three phrases added to the pencil-written document afterwards, or were they always there?

The following are some of the many observations that were made during the examination of the questioned document and the known document.

1. The words, "CHILDRENS HOSPITAL," "4 MONTHS OLD" and "OK TO EMBALM" that appear on the defendants' document are missing on the plaintiff's document.

2. The lower section of the number "5" on line 1 of the defendants' document is joined to the upper section of the "S" in the word "CHILDRENS" on line 2. (See Illustration 3)

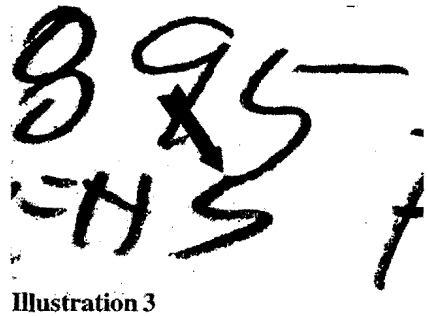

Illustration 3

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3. The final section of the number "5" on plaintiff's document is unnatural and squared off instead of a natural flourish. Also noted, was the how "squared off" foot of the "5" on the plaintiff's document extends beyond the "5" and is actually the top section of the letter "S" in the missing word "CHILDRENS."

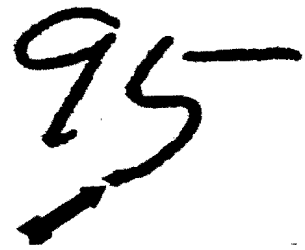

Illustration 4

4. In the defendants' document the number "5" measures 6.0 mm which is shorter than the length of the "5" in the plaintiff's document. That is due to the fact that the "5" in the plaintiff's document also contains part of what was originally an "S."

5. The letter "A" in the word "HOSPITAL" is aligned with the letter "G" in the name "GAJAK" on the defendants' document. The lower section of the right wall of the letter "A" in the word "HOSPITAL" extends beyond the initial stroke of the letter "G". (See Illustration 5)

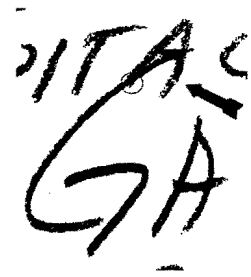

Illustration 5

6. A measurement taken from the bottom upward on the initial stroke of the letter "G" on defendants' document measured 9.3 mm while the corresponding measurement on plaintiff's document is only 7.8 mm. The remainder of the "A" of "Hospital" on plaintiff's document caused the extension in the written line.

7. Also on plaintiff's document, the foot of the lower section of the left wall of the letter "A" in the word "HOSPITAL" slightly intersects the upper left section of the letter "G" in the word "GAJAK" leaving a small point inside the line. (See Illustration 6)

Illustration 6

8. There is a similar point found at the foot of the lower section of the left wall of the letter "A" in the word "HOSPITAL" in plaintiff's document. (See Illustration 5) Measurements taken at the bottom of the letter "G" to the foot of the letter "A" inside the upper curve of the letter "G" (left side) on defendants' document and to a similar point found on the plaintiff's document, are the same.

Conclusion: The evidence supports the defendants' claim that the words 'CHILDRENS HOSPITAL," "4 MONTHS OLD" AND OK TO EMBALM" were on the original document from the beginning.

Linda Collins, CDE, is a Certified Document Examiner. As a forensic document and handwriting examiner she has qualified under the Daubert/Dupont guidelines several times. Linda has worked on cases for the U.S. Government, FBI, Police Department, District Attorney's office, the U.S. Army and several Fortune 500 companies. She is an approved and state licensed instructor and offers continuing education credits for law enforcement, certified fraud examiners and licensed private investigators. Her company, Advanced Document and Handwriting Examination Services is located in Plano, Texas, near Dallas.

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EXPERT NOTES

COURT APPOINTED SCIENTIFIC EXPERTS

by

J. Wright Leonard, CDE

The American Association for the Advancement of Science (AAAS) is the largest federation of scientific societies, with nearly 300 affiliated scientific and engineering societies. It is also the world's largest general membership society with 144,000 members, comprised of scientists, engineers, policy makers, and science educators.

The Scientific Freedom, Responsibility and Law Program of AAAS launched a Demonstration Project in the Fall of 1998 named Court Appointed Scientific Experts, for the purpose of assisting federal trial judges who wish to appoint a scientist or engineer under any of the sources of authority available to them. The program is currently in the organizational phase, but will begin taking cases in the Fall of 1999. Ms. Deborah Runkle, manager of the Demonstration Project, granted an interview in order to provide information on this innovative program. The project will focus on Federal Court matters, rather than State Court matters, and on civil, rather than criminal, litigation (although they would not refuse a criminal case if one were compelling). The Demonstration Project will last five years and will be evaluated by the Federal Judicial Center.

These scientific and technical experts will be selected to assist the judge primarily in several areas:

1. They may be testifying witnesses.
2. They may educate the judge in understanding the science before trial.
3. They may help/advise the judge in making decisions as to the admissibility of evidence through a Daubert hearing.

Requests for scientific and technical experts will be entertained from judges only, and the project will not respond to requests from attorneys or parties to litigation.

Federal judges are increasingly seeing more and more cases before them involving complex or novel issues where experts are divided, and many have voiced the desire to have their own experts in such matters. Eighty percent of civil cases involve at least one expert witness.[1] In a survey related to the subject of independent experts, 87% of the judges said they believed the appointment of a court expert would be useful in some cases.

Only 20% of the judges surveyed had ever made such an appointment. Those who had appointed an expert were interviewed and reported tremendous satisfaction, along with the fact that cases settled more quickly.

Now, with the Demonstration Project, triers of fact will have an institutional link through which they may obtain independent experts and obtain assistance in identifying highly-qualified and impartial scientists and engineers, who will serve as experts to the courts, rather than to the parties to litigation. Experts will be selected on a case-by-case basis, tailored to the specific request of the judge seeking assistance.

In selecting experts, the project will reach beyond professional experts into academia, for example, and other areas. While they will not exclude from consideration individuals who have already provided their expertise in legal proceedings, those individuals who generally make their living as experts will have less appeal to the project staff.

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1. *A Look at Experts in the Courtroom*, The Washington Post, August 22, 1999, p. B03

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At this time, the project staff are unsure whether they will be taking cases involving Document Examination, but they will consider it if the question arises.

Author's Note: The Demonstration Project leaders are being provided with information on NADE and its membership.

J. Wright Leonard, CDE, BCFE, was first qualified as an expert witness in 1983. She was one of the first members of NADE, joining in 1981, and is presently the Research Editor of the NADE Journal. Ms. Leonard is a member of the IAI (NYS Division), the Association of Certified Fraud Examiners and the Evidence Photographers International Council. Certified by NADE and the CFE, she operates from her office in Philadelphia; has been retained by clients throughout the Eastern United States: and has lectured on handwriting identification and fraudulent documents before such organizations as the American Dental Association and the Association of Certified Fraud Examiners.

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EXPERT NOTES

PROFICIENCY TESTING FOR FORENSIC EXPERTS

by

J. Wright Leonard, CDE

Collaborative Testing Services, Inc. (CTS) has conducted testing programs since 1971, enjoys global experience and recognition, and currently offers 130 tests in a variety of areas, including forensics, as well as rubber, plastics, fasteners and metals, containerboard, paper, and color. At this time, over 2,200 organizations/labs in more than 55 countries subscribe to their testing programs. Participation in an inter-laboratory proficiency program tests a lab's ability to conduct a particular examination and allows for comparison of methods and results among participating laboratories.

Forensic testing programs include the following areas:

Controlled Substances	Fibers
Handwriting	Flammables
Serology DNA	Metals
Questioned Documents	Paint
Bloodstain Pattern Research	Glass
Latent Prints	PCR Research
Firearms	Firearms Research
Paint	Gunshot Residue
Toolmarks	Flammables Research
Firearms Imprint	Drugs Research
Impression Evidence	

CTS has been designated an approved provider of proficiency tests by the American Society of Crime Laboratory Directors/ Laboratory Accreditation Board (ASCLD/LAB). In addition, the tests are accepted as meeting the proficiency testing requirements for certification by the American Board of Criminalistics (ABC).

The CTS interlaboratory testing programs are recognized by the following organizations:

American Association for Laboratory Accreditation
American Board of Criminalistics
American Society of Crime Laboratory Directors Laboratory Accreditation Board
Comite Francais D'Accreditation
Deutsches Akkreditierungssystem Prufwesen
National Aerospace Defense Contractors Accreditation Program
National Voluntary Laboratory Accreditation Program
Standards Council of Canada;
and United Kingdom Accreditation Service

Participating in an ongoing interlaboratory program allows a laboratory to assess the level and uniformity of its testing by comparing its results to those of other laboratories. These results represent a group consensus.

To accomplish this, controlled samples are sent out to all participants on a regular schedule and the testing takes place within a tightly prescribed time frame. Then analysis techniques are tailored to match the particular requirements of each testing program.

An individual lab's results will be analyzed using time-tested methods based on sound statistical principles (developed in conjunction with the National Institute of Standards and Technology), and presented in a manner that can be clearly understood by a non-statistician. Testing performance is gauged using multivariate, comparative techniques. The use of comparative statistics means that the lab's results are not judged against an absolute value, but against the consensus value as determined by the participants and marketplace. Comparative statistics ensure the analysis is "real world." The use of multivariate statistics allows analysis of a lab's consistency as well as precision.

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In some programs, a lab's results are compared against both the performance within the current testing round and a database of past performance. For the Forensics program, predistribution testing is combined with the consensus results to analyze performance.

The design and preparation of the Questioned Documents Examination is conducted with the assistance of the Questioned Documents Section of the American Academy of Forensic Sciences. This test may encompass any aspect of the questioned documents field, including handwriting comparison.

The design and preparation of the Handwriting Examination is also conducted with the assistance of the Questioned Documents Section of the American Academy of Forensic Sciences. This test is limited to the examination and comparison of handwriting.

The shipping dates for The Forensic Testing Program for Handwriting Examination is the week of March 20, 2000 (deadline November 5, 1999), and the shipping date for the Questioned Documents Examination is July 17, 2000 (Registration deadline in March 15, 2000). The fee for the Questioned Documents Examination is $120, and the fee for the Handwriting Examination is $175, each paid at the time of registration. These tests are given only once each year.

For further information contact Collaborative Testing Services, Inc., 340 Herndon Parkway, Herndon, Virginia 20170-4830, Telephone 703-742-9107.

Compiled from materials of the Collaborative Testing Services, Inc.

J. Wright Leonard, CDE, BCFE, was first court qualified as an expert witness in 1983. She was one of the first members of NADE, joining in 1981, and is presently the Research Editor of the NADE Journal. Ms. Leonard is a member of the IAI (NYS Division), the Association of Certified Fraud Examiners and the Evidence Photographers International Council. Certified by NADE and the ACFE, she operates from her office in Philadelphia; has been retained by clients throughout the Eastern Untied States; and has lectured on handwriting identification and fraudulent documents before such organizations as the American Dental Association and the Association of Certified Fraud Examiners.

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Forensically Speaking

by

Phyllis Cook, CDE[1]

+ To stem the exponential wave of counterfeiting, new technological enhancements are constantly being upgraded and incorporated by law enforcement bodies. Articles in this issue address the latest safeguards on paper currency in the US, and the use of watermarks for dating of documents. Following are the current security measures for check paper.

+ Check Security:

- Multi-colored Backgrounds
- Copy-void Safety Features
- Micro Printing - Some checks have an MP icon on the obverse side next to the signature line certifying that the signature line actually says "Authorized Signature Only" printed in extremely small type. A second line of micro print appears on the reverse side reading "Original Document."
- Watermarks
- Simulated Watermarks
- Chemical Reactivity
- Heat Reactive Ink - If one rubs a finger over the ink, the color will fade, only to reappear.
- Security Fonts
- Warnings - printed directly on checks
- Security Paper - special paper designed to produce obvious stains and discoloration if someone attempts to alter any part with chemicals and solvents

+ Do you ever accidentally get fingerprints on a camera lens, monitor, LCD viewing screen? You can remove them with Scotch "Magic" Tape. Just lightly press the tape over the offending print and lift it off.

+ Abecedarian: One who is learning the alphabet or one who teaches the rudiments of learning. From Webster's Collegiate Dictionary

[1] With contributions from Emily Will, CDE.

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JOURNAL OF THE NATIONAL ASSOCIATION OF DOCUMENT EXAMINERS

Submission Guidelines

Types of Papers Accepted:

1. Research papers report original, primary research in any area of QDE.
2. State of the Art Reviews survey the published literature on a specific topic in the field of QDE.
3. Case Reports present one particular aspect of a QDE case which is no longer subject to litigation or confidentiality. It is the responsibility of the author to obtain any required permission for use of material submitted. Should any litigation arise from improper use of materials, the liability belongs to the individual author, not to NADE.
4. Technical Reports discuss a single topic regarding equipment or methodology.
5. Letters to the Editor offer brief, specific comment on a current issue or on a paper previously published in the Journal.
6. OpEd (Opinion/Education) pieces set forth an opinion, pose a question, or inform about some aspect of QDE.

All papers must include references to support assertions and must present some information or viewpoint regarding some aspect of QDE which would be of value to readers.

Method of Submitting Papers:

1. Send four (4) printed copies and one (1) 3.5" diskette with either an ascii file, text file, Microsoft Word file, or Word Perfect file of the paper to Emily Will, Editor. Alternatively, submissions may be sent via email to qdewill@mindspring.com

2. As part of the above, submit one camera-ready print copy or electronic file of each exhibit or illustration you intend to have in this paper. If you desire to submit illustrations electronically, contact the editor in advance to discuss format. Each illustration should have a figure number by which it is referred to in the paper, and a caption or text which succinctly identifies it and states its purpose.

3. Deadlines for the next three issues are November 1, 1999, January 15, 2000 and April 15, 2000.

4. It is highly recommended that you begin the process of writing your paper by discussing the potential for publication with one of the editors via email, telephone or letter. Contact information can be found at the front of the journal. This discussion will take the place of submission of an abstract.

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Authors may in general follow any standard style manual. That published by the U.S. Government Printing Office is recommended, since it is regularly up-dated and readily available. Papers should, however, have these features:

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2. Name(s) of author, and if multiple, the one(s) who will deal with the Editorial Board should be clearly indicated.
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